REMARKS

By the present response, Applicant has amended claims 1, 2 and 8 to further clarify the invention. Claims 1-3, 5-8, 11-13 and 16 and 17 remain pending in the present application.

In the Office Action October 7, 2005, the Examiner has rejected claims 1, 2, 8, 11 and 12 under 35 U.S.C. §101. Further, claims 1-3, 5-8, 11-13, 16 and 17 have been rejected under 35 U.S.C. §102(b) as being anticipated by a publication entitled "On Codes Derivable from the Tensor Product of Check Matrices" (Wolf). Claims 1-3, 5-8, 11-13, 16 and 17 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Applicants' Admitted Prior Art (APA) in view of U.S. Patent No. 6,373,859 (Jedwab et al.) and further in view of Wolf.

35 U.S.C. §101 Rejections

Claims 1, 2, 8, 11 and 12 have been rejected under 35 U.S.C. §101. Applicants have amended these claims to further clarify the invention and respectfully request that these rejections be withdrawn.

35 U.S.C. §102 Rejections

Claims 1-3, 5-8, 11-13, 16 and 17 have been rejected under 35 U.S.C. §102(b) as being anticipated by Wolf. Applicant respectfully traverses these rejections.

Wolf discloses a description of a class of codes having check matrices which are the tensor product of the check matrices of known non-binary codes and binary codes. The error-correction, error-detection, and error-location capabilities of these codes are specified in terms

of the properties of the component codes. The construction procedure allows for a class of codes with the wide variety of redundancies and error-control capabilities. Examples are given of codes from this class which correct random burst of errors and burst of errors.

Regarding claims 1-3, 6, 8 and 13, Applicant submits that Wolf does not disclose or suggest the limitations in the combination of each of these claims of, *inter alia*, encoding or decoding of an RS (Reed-Solomon) code in bit level, or a generated binary equivalence matrix of the RS code that includes rows and columns which are m times rows and columns of the non-binary matrix, where symbols of the non-binary matrix have a $GF(2^m)$ dimension. The Examiner asserts that Wolf discloses these limitations on page 282, column 1. However, these portions of Wolf merely disclose an example construction procedure for a check matrix that is equal to the tensor product of a check matrix for the binary single error correcting hamming code and the non-binary single error-correcting code with the symbols from GF(4).

These portions of Wolf do not disclose or suggest encoding or decoding of an RS code in bit levels as recited in the claims of the present application. These portions relate to a check matrix for the binary single error correcting code. Moreover, these portions do not disclose or suggest a binary equivalence matrix of the RS code that includes row and columns which are M x rows and columns of the non-binary matrix, where symbols of the non-binary matrix have a $GF(2^m)$ dimension. The non-binary single error correcting code disclosed in Wolf has symbols from GF(4). Thus in Wolf, m=2. The resultant check matrix formed from the tensor product in

Wolf is not m times rows and columns of the non-binary matrix, as recited in the claims of the present application. The non-binary matrix in Wolf has two rows and five columns.

The resultant check matrix formed after the tensor product, in binary form, has four rows and 15 columns. This is not m (2) times rows (2) and columns (5) of the non-binary matrix. In contrast, the limitations in the claims of the present application relate to a generated binary equivalent matrix that includes row and columns which are m times rows and columns of the non-binary matrix. Further, the limitations in the claims of the present application relate to a binary information sequence of a Reed-Solomon code, whereas in contrast, Wolf discloses a binary single error correcting hamming code.

Regarding claims 5, 7, 11, 12, 16 and 17, Applicants submit that these claims are dependent on one of independent claims 3, 6, 8 and 13 and, therefore, are patentable at least for the same reasons noted previously regarding these independent claims.

Accordingly, Applicant submits that Wolf does not disclose or suggest the limitations in the combination of each of claims 1-3, 5-8, 11-13, 16 and 17 of the present application. Applicant respectfully requests that these rejections be withdrawn and that these claims be allowed.

35 U.S.C. §103 Rejections

Claims 1-3, 5-8, 11-13, 16 and 17 have been rejected under 35 U.S.C. §103(a) as being unpatentable over APA in view of Jedwab et al. and further in view of Wolf. Applicant respectfully traverses these rejections.

Jedwab et al. discloses encoding and decoding data where in a coded orthogonal frequency division multiplex (COFDM) system N-bit data words are encoded as 2^m-symbol code words (binary, quaternary, octary, etc.). The code words are selected for desired low peak-to-mean envelope power ratio characteristics of transmissions over a COFDM channel, from a set of cosets of a linear sub-code of a code having a specified generator matrix.

As has been noted previously, Wolf does not disclose or suggest encoding or decoding of an RS (Reed-Solomon) code in bit level, or a generated binary equivalence matrix of the RS code that includes rows and columns which are m times rows and columns of the non-binary matrix, where symbols of the non-binary matrix have a GF(2^m) dimension.

The Examiner admits that the APA does not disclose or suggest Reed-Solomon or non-binary codes, but asserts that Jedwab et al. discloses these limitations in figure 13 and column 72, line 1 et seq. The Examiner further admits that neither the APA nor Jedwab et al. disclose or suggest binary equivalence matrix being of m times rows and columns of non-binary matrix, and non-binary symbols having GF(2^m) dimension, but asserts that Wolf discloses these limitations on page 282, column 1, equations 4-7. However, as has been noted previously, Wolf does not

disclose or suggest these limitations in the claims of the present application. Further, Jedwab et al. does not disclose or suggest encoding or decoding of a Reed-Solomon code in bit level, or a non-binary matrix. Further, neither Jedwab et al. nor APA overcome the substantial defects noted previously regarding Wolf.

Accordingly, Applicant submits that none of the cited references, taken alone or in any proper combination, disclose, suggest or render obvious the limitations in the combination of each of claims 1-3, 5-8, 11-13, 16 and 17 of the present application. Applicant respectfully requests that these rejections be withdrawn and these claims be allowed.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant submits that claims 1-3, 5-8, 11-13, 16 and 17 are now in condition for allowance. Accordingly, early allowance of such claims is respectfully requested. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned, Frederick D. Bailey, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
FLESHNER & KIM, LLP

David C. Oren
Registration No. 38,694
Frederick D. Bailey
Registration No. 42,282

P.O. Box 221200
Chantilly, Virginia 20153-1200
(703) 766-3701 DCO/FDB:cah:tlg
Date: January 6, 2006
Please direct all correspondence to Customer Number 34610
\\fk4\Documents\2000\2000-132\77190.doc